

ABSTRACT OF THE DISCLOSURE

Disclosed is a random access data transmission system and method using OFDMA. The system includes a scheduling ID into an access grant on a preamble for a random access, and transmits it together with an acknowledgment or a non-acknowledgment of the preamble, a base station uses the scheduling ID to notify the mobile station of a random access data transmittable time and a data transmission channel through a control channel, and the mobile station transmits a preamble in advance. After receiving a transmission assignment instruction corresponding to a scheduling ID through the control channel, the mobile station transmits random access data through an assigned channel.